15.9000

25270

S/[illegible]/014/[illegible]
[illegible]

AUTHORS: Bresler, S. Ye., Zakharov, G. M., Kirillov, S. V.

TITLE: [illegible] of the macromolecules of [illegible] polyisoprene into natural rubber

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. [illegible], no. 7, [illegible], 1072-1076

TEXT: The diffusion of tritium [illegible] polyisoprene [illegible] rubber was studied. The use of tritium [illegible] to 10-[illegible] with a coefficient of diffusion of [illegible] 10-[illegible] - 10[illegible] [illegible] compared to [illegible]. Tritium [illegible] was produced by the [illegible] of [illegible] water and frozen out in liquid nitrogen. [illegible] acetone in the presence of [illegible] ting [illegible] of dimethyl [illegible] water, [illegible] 101-105°C. [illegible] copper cathode, nickel anode, [illegible]

Card 1/7

solution; 2% [illegible] solution; until the [illegible] gave no further reaction specific for triple bonds. The dimethyl-vinyl carbinol was salted out by means of potash, dried and distilled. The dehydration of the dimethyl-vinyl carbinol was effected by [illegible] at 280°C.

The resulting isoprene was purified by distillation and polymerized by means of sodium at 70°C. The polymer had a specific activity of 0.1 microcurie/g. It was subjected to partial destruction by heating with benzoin + Fe naphthenate and then fractionated by extraction. It was not possible to use a standard beta counter due to the low energy of the beta particles. The measurements were made with the apparatus shown diagramatically in Fig. 3. The moving screen 5 permitted the measuring of the background without removal of the sample from the apparatus. The temperature was controlled by a bridge connection to which the resistance thermometer 2 was connected. A film of polyisoprene in benzene solution (0.5 to 0.25 μ thick) was applied to a plate of natural rubber, the sample put into the apparatus, the apparatus evacuated and filled with a mixture of argon and alcohol vapor. After heating to the test temperature the chronological development of the radiation intensity was measured. The

coefficient of diffusion D was calculated from $I/I_0 = f(\log \mu^2 Dt)$. I_0 is the initial activity of the sample, I the activity at the time t, μ the absorption coefficient of natural rubber for beta particles, $\mu = (7500 \pm 200)$ cm^{-1}, f the combination of Kramp's integral functions. The experimental curves of diffusion for polyisoprene with a molecular weight (M) = $1.1 \cdot 10^4$ are shown in Fig. 4. Fig. 5 represents log D as function of 1/T in the range 22-140°C for polyisoprene with M = $1.1 \cdot 10^4$. The activation energy was found to be 8.7 kcal/mole. Fig. 6 represents D for polyisoprene with M = 8.10^3 - $2.8 \cdot 10^4$ at 100°C. The values of D are in the range of 6.10^{-13} to $0.9 \cdot 10^{-13}$ cm^2/sec. D = $(1.4 \pm 0.2) \cdot 10^{-13}$ cm^2/sec for polyisoprene with M = $1.1 \cdot 10^4$ at 100°C. The empirical equation $D = 6.6 \cdot 10^{-8} M^{-1.31}$ holds. The values obtained for D are much lower than those found by P. Debye (see below). A. Ye. Favorskiy is mentioned. There are 6 figures and 8 references: 3 Soviet-bloc and 5 non-Soviet-bloc. The 3 references to English-language publications read as follows:
F. Bueche, W.M. Cashin, P. Debye, J.Chem. Phys., 20, 1956, 1952;
C.L. Raynor, L. Thomassen, L.J.Rouse, Trans.Am.Soc.Metals, 30, 313, 1942;
V.Eyring, T.Ree, N.Hirai, Proc.Nat.Acad. Sci., 44, 1213, 1958.

Card 3/7

Diffusion of the macromolecules of ... 25270

S/190/61/003/007/014/021
B101/B220

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds, AS USSR); Leningradskiy politekhnicheskiy institut im. M.I. Kalinina (Leningrad Polytechnic Institute imeni M. I. Kalinin)

SUBMITTED: November 5, 1960

Card 4/7

BRESLER, S.Ye.; ZAKHAROV, G.M.; KIRILLOV, S.V.

Diffusion of synthetic polyisoprene macromolecules in natural rubber. Vysokom.soed. 3 no.7:1072-1076 Jl '61. (MIRA 14:6)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR i Leningradskiy politekhnicheskiy institut imeni N.I.Kalinina.
(Isoprene) (Rubber) (Diffusion)

ACCESSION NR: AT4043273 S/2744/64/000/007/0036/0046

AUTHOR: Masagutov, R. M., Berg, G. A., Kirillov, T. A., Varfolomeyev, D. F., Kulinich, G. M., Skundina, L. Ya.

TITLE: Methods for decreasing the hydrogen consumption during hydrofining of Diesel fuel from high-sulfur petroleum

SOURCE: Ufa. Bashkirskiy nauchno-issledovatel'skiy institut po pererabotke nefti, Trudy*, no. 7, 1964. Sernisty*ye nefti i produkty* ikh pererabotki (Sour crude oil and products of refining), 36-46

TOPIC TAGS: petroleum, Diesel fuel, desulfurization, hydrogen consumption, hydrocarbon, naphthenic hydrocarbon, dehydrogenation, petroleum refining, hydrofining, high sulfur petroleum, Arlan petroleum

ABSTRACT: Since the main difficulty in the hydrofining of petroleum is supplying the refinery with hydrogen, the authors attempted to utilize the hydrogen liberated during the process itself as a result of dehydrogenation of the naphthenic hydrocarbons in the raw material. An Arlan petroleum fraction (density 0.863, sulfur content 2.58%, iodine

Card 1/3

ACCESSION NR: AT4043273

number 9.4%, sulfurization 34.7%) was used as a test sample in a closed system in which a gas containing 90% hydrogen circulated over a technical aluminum-cobalt-molybdenum catalyst. The effect of different factors, such as temperature, pressure and feed rate, on the degree of desulfurization, iodine number, hydrogen consumption and the duration of action of the catalyst was investigated. The hydrogen consumption was determined both by the variation in the composition of raw material and desulfurized product and by direct measurement. It was found that decreasing the pressure from 50 to 30 atm. and increasing the temperature from 380 to 410C during refining decreases the hydrogen consumption by 27%. Under these conditions, the technical aluminum-cobalt-molybdenum catalyst has a long life and ensures a product of good quality. Hydrofining at a pressure of 20 atm. and temperature of 410C cannot be recommended, even though this reduces the hydrogen consumption by an additional 21%, because the lifetime of the catalyst between regenerations is insufficient. A prolonged catalytic action is made possible by lowering the temperature to 350C. At this temperature, the hydrogen consumption can be decreased by 35-50% while maintaining the extent of desulfurization at 70-80%. Orig. art. has: 12 figures and 6 tables.

Card 2/3

ACCESSION NR: AT4043273

ASSOCIATION: Bashkirskiy nauchno-issledovatel'skiy institut po pererabotke nefti, Ufa (Bashkir Scientific Research Institute for Petroleum Refining)

SUBMITTED: 00 ENCL: 00

SUB CODE: FP NO REF SOV: 005 OTHER: 000

Card 3/3

ZAITOVA, A.Ya.; MASAGUTOV, R.M.; VOL'FSON, I.S.; KIRILLOV, T.S.; DOBREYKIN, V.Ye.

Purifying the reflux of units for thermal cracking on an alumino-silicate catalyst. Trudy Bash NIINP no.5:56-68 '62.

(MIRA 17:10)

BERG, G.A.; MASAGUTOV, R.M.; VOL'FSON, I.S.; KIRILLOV, T.S.; CHEKOVINSKIY, M.I.; KHARITSKAYA, R.Z.

Hydropurification of thermal cracking reflux. Trudy Bash NIINP no.5: 69-77 '62. (MIRA 17:10)

AKHMETOVA, R.S.; TORBEYEVA, L.R.; KIRILLOV, T.S.

Obtaining structural bitumens from the waste products of petroleum production on a continuous-oxidation unit. Trudy Bash NIINP no.5:140-150 '62. (MIRA 17:10)

MASAGUTOV, R.M.; BERG, G.A.; KIRILLOV, T.S.; VARFOLOMEYEV, D.F.; KULINICH, G.M.; SKUNDINA, L.Ya.

Hydrofining of diesel fuel from high sulfur-bearing crude with a decreased consumption of hydrogen. Khim. i tekh. topl. i masel 8 no.12:7-12 D '63. (MIRA 17:1)

1. Bashkirskiy nauchno-issledovatel'skiy institut po pererabotke nefti i Ufimskiy neftepererabatyvayushchiy zavod.

MASAC'JTOV, R.M.; BERG, G.A.; KIRILLOV, T.S.; VARFOLOMEYEV, D.F.; KULINICH, G.M.; SKUNDINA, L.Ya.

Reducing the consumption of hydrogen in the hydrofining of diesel fuel from sour oil. Trudy BashNII NP no.7:36-46 '64. (MIRA 17:9)

MASAGUTOV, R.M.; BERG, G.A.; VARFOLOMEYEV, D.F.; SELIVANOV, T.I.; RUGAY, Ye.A.; MUKHAMETOV, M.N.; KULINICH, G.M.; SOKOLOVA, V.I.; KIRILLOV, T.S.

Hydrogenation of benzene on a nickel catalyst on kieselguhr. Trudy BashNII NP no.7:127-133 '64. (MIRA 17:9)

L 47335-65 EWT(m)/EPF(c)/T/EWP(t)/EWP(b) Pr-4 IJP(c) JD/WE

ACCESSION NR: AP5006819 S/0065/65/000/002/0003/0006

AUTHOR: Magagutov, R. M.; Berg, G. A.; Varfolomeyev, D. F.; Selivanov, T. I.; Kulinich, G. M.; Mironov, A. A.; Kirillov, T. S.; Pau, G. M.; Anipin, M. K.; Derevyanko, P. I.; Smirnova, S. G.

TITLE: Water purification of diesel fuel with a lowered expenditure of hydrogen using an industrial unit

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 2, 1965, 3-6

TOPIC TAGS: water purification, diesel fuel, hydrogen

ABSTRACT: Prolonged operation of the UNPZ 24-5 "Order of Lenin" water purification unit which removes water from petroleum verified the recommendations of the Bashkir Scientific Research Institute of the Chemical Industry and the All-Union Scientific Research Institute of the Chemical Industry on the possibility of reducing hydrogen consumption. The average annual hydrogen consumption for 1963 in removing water from directly distilled and redistilled diesel fuel at a reactor pressure of 380°C and a pressure of 28-36 at amounted to 0.48, or less than planned by a factor of 1.5. Lowering the pressure in the reactors from 34-36 to 28-30 at

Card 1/2

L 47385-65

ACCESSION NR: AP5006819

made it possible to reduce hydrogen consumption by 1.3 times without degrading the quality of the work. The regeneration period for operation of the catalyst was 8 months. The activity of the first reactor catalyst decreases more quickly than the catalyst from subsequent reactors. A depth of purification of raw materials of sulfur compounds below 50% occurs in the first reactor after processing 1200 tons of raw material per cubic meter of catalyst and in the second reactor upon the purification of 2300 tons of raw material per cubic meter of catalyst. Orig. art. has: 2 figures, 1 table.

ASSOCIATION: BashNII, Ordena Lenina UNPZ

SUBMITTED: 00 ENCL: 00 SUB CODE: GC, OC

NO REF SOV: 005 OTHER: 000

Card 2/2

MASAGUTOV, R.M.; BERG, G.A.; VARFOLOMEYEV, D.F.; SELIVANOV, T.I.; KULINICH, G.M.; MIRONOV, A.A.; KIRILLOV, T.S.; PAU, G.M.; ANTIPIN, M.K.; DEREVYANKO, P.I.; SMIRNOVA, S.G.

Hydrofining of diesel fuel with decreased expenditure of hydrogen on an industrial plant. Khim. i tekh. topl. i masel 10 no.2:3-6 F '65. (MIRA 18:8)

1. Bashkirskiy nauchno-issledovatel'skiy institut po pererabotke nefti i ordena Lenina Ufimskiy neftepererabatyvayushchiy zavod.

S/081/63/000/004/036/051
B194/B180

AUTHORS: Sokov, Yu. F., Putilova, Z. D., Kirillov, T. S.

TITLE: The use of rotory-disc contactors for the diethylglycol extraction of benzene [...]

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1963, 522, abstract 4P167 (Tr. Bashkirsk. n-i. in-t po pererabotke nefti, no. 5, 1962, 201 - 205)

TEXT: Results are given of experiments, performed in the BashNII NP, on the diethylglycol extraction of benzene from a fraction of the platforming product on rotory disc extractors 50 and 80 mm diam. The vertical cylindrical shell of the extractor is divided into a number of sections formed by the series of fixed stator rings. In the centre of each section is a flat horizontal disc which is rotated by a shaft passing along the vertical axis of the shell. Height of the extractor is 2 m., the disc pitch is 10 mm., the shaft speed 400 r.p.m. for the 50 mm extractor and 150 r.p.m. for the 80 mm one. The extraction was carried out consecutively in two extractors: in the first the raw material was extracted with fresh diethylglycol and in the second the extracted phase obtained from the first extractor was con-

Card 1/2

tacted with the recycled extract. The raffinate phase from the top of the second extractor was mixed with the raw material and passed to the bottom of the first extractor. The final raffinate phase was withdrawn from the top of the first extractor and the final extracted phase from the bottom of the second extractor. The total output of the extractor for both phases was 17-20 m^3/m^3. Properties of a typical raw material: boiling range 57-134°; aromatic hydrocarbons - 22.2%, including 9.5% benzene, 9.2% toluene and 3.5% xylenes. In the extraction with 800% (calculated on the crude material) diethylglycol, which contained 1.5% of water, at 85-90° and 100 vol% of the recycled extract each 100 parts of crude yielded 79 parts of the raffinate phase containing 2.5% aromatic hydrocarbons and 21 parts extract containing 97% aromatic hydrocarbons. The extract after purification with sulfuric acid was distilled in the laboratory in a column with 20 theoretical plates and benzene satisfying the [OCT 8448-57 (GOST 8448-57) specification was obtained. [Abstracter's note: Complete translation.]

BELIKOV, P. S.; DMITRIYEVA, M. I.; KIRILLOV, T. V.

"Physiological and biochemical characteristics of response reactions of the plant cell to the continuous action of high temperature."

UNESCO - International Symposium on the Role of Cell Reactions in Adaptations of Metazoa to Environmental Temperature.

Leningrad, USSR, 31 May - 5 June 1963

KIRILLOV, V. Master of Tech. Sci. and PEROV, S. Acad.

"Russian Republic Ministry of Local Industry Does Little About New Technology and Saving Food Raw Materials," Izvestiya 15 Dec 55

Current Digest of Soviet Press, VII, No.50, 25 Jan 56

MATYUKHIN, A.; POGOREL'TSEVA, Z.; KIRILLOV, V.; SKOBKIN, S.; GALYUK, V.

A helping hand of friendship. Sov.profsoiuzy 7 no.9:22-24 My '61. (MIRA 14:4)

1. Predsedatel' komiteta profsoyuza Khar'kovskogo traktornogo zavoda. (for Matyukhin). 2. Predsedatel' mestnogo komiteta vtoroy Khar'kovskoy bol'nitsy (for Pogorel'tseva). 3. Predsedatel' ob"yedinennogo komiteta profsoyuza Ordzhinikidzevskogo tresta stolovykh (for Kirillov). 4. Direktor Dvortsa kul'tury khar'kovskikh zheleznodorozhnikov (for Skobkin). 5. Predsedatel' rabochkoma sovkhoza "Borki" (for Galyuk).
(Kharkov Province—Trade unions)
(Kharkov Province—Agriculture)

KOLYASINSKIY, Z., inzh.; Kirillov, V., inzh.

Crankshafts for M-21 engines of "Volga" automobiles. Avt. transp.39 no.1:34-35 Ja '61. (MIRA 14:3)
(Automobiles—Engines)

KIRILLOV, V., kand.tekhn.nauk

Air-arc cutting of metals. Mech. transp. 20 no.12:45-47 D '61. (MIRA 14:12)
(Electric metal cutting)

KIRILLOV, V.A.

Pulse wave distribution in atherosclerosis. Klin. med. 38 no. 2:62-66 F '60. (MIRA 14:1)

(ARTERIOSCLEROSIS) (PULSE)

ACC NR: AT7000563 SOURCE CODE: UR/0000/65/000/000/0126/0131

AUTHOR: Arsh, E. I.; Kirillov, V. A.

ORG: Dnepropetrovsk Mining Institute (Dnepropetrovskiy gorn y institut)

TITLE: Investigation of electric and magnetic properties of sands containing ores for devising means of automation

SOURCE: Dnepropetrovsk. Gornyy institut. Gornaya elektromekhanika i avtomatika, no. 3, 1965, 126-131

TOPIC TAGS: magnetic property, polycrystal mineral, magnetic susceptibility, electromagnetic screen, ferromagnetic substance, concentrometer, ore, automation, electric property, mineral, electromeasuring device

ABSTRACT: The magnetic properties of polycrystal minerals were investigated using a special instrument similar to that used for measuring magnetic susceptibility. This instrument is described in detail. It consists of a magnetic bridge including an H-shaped core containing two coils, one of which is the generator and the other is the indicator. This instrument is located in an electromagnetic screen in order to protect it from interference when weak magnetic samples are measured. Results of measurements of magnetic susceptibility of magnetically weak sands are represented graphically. These results show that sands can be classified by their magnetic properties. The magnetic property of minerals depends not only

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ACC NR: AT7000563

on the presence of magnetite and titanomagnetite grains, but also on the influence of other minerals which are formed during the transition into other forms. A formula is given for computing the magnetic susceptibility from the contents of ferromagnetic substances. Results of these investigations showed that dielcometry and kappametry may be used for making concentrometers. Orig. art. has: 2 tables, 4 figures, and 3 formulas.

SUB CODE: 08/07/SUBM DATE: 04Oct65/ ORIG REF: 007

Card 2/2

KIRILLOV, V.A., kand. tekhn. nauk

Cooling cutting instruments with an emulsion spray at the plants of the Ministry of the River Fleet. Trudy LIVT no.73:43-45 '64. (MIRA 18:11)

L 9560-66 EWT(1)/EWP(m)/EWT(m)/EWA(d)/EPCS(k)/EWA(1) JD

ACC NR: AP5027574 SOURCE CODE: UR/0170/65/009/005/0654/0656

55 55 34

AUTHOR: Kirillov, V. A.; Khudenko, B. G. 8

53

ORG: Aviation Institute im. S. Ordzhonikidze, Moscow (Aviatsionnyy institut)

TITLE: Calculation of the direction of the axis of a resulting flow of the mixing of two turbulent jets

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 9, no. 5, 1965, 654-656

TOPIC TAGS: jet mixing, resulting flow, air jet, inclination angle, turbulent jet

ABSTRACT: A simplified method is presented for calculating the direction of a resulting turbulent gas flow which is formed by the mixing of two turbulent jets. This method does not take into consideration the static pressure in the jet mixing region and interaction with the surrounding gaseous media. For the case where two plane parallel turbulent air jets intersecting at an angle α ($\alpha_1 = 0$ and $\alpha_2 = \alpha$, where subscripts 1 and 2 refer to the first and second jets) are mixed, the following equation is given for calculating the inclination angle of the resulting flow α_Σ:

$$\operatorname{tg}\alpha_\Sigma = \frac{\sin\alpha}{\cos\alpha + \Delta p_1/\Delta p_2},$$

where Δp_1 and Δp_2 are the pressure changes in the two air jets. In the case where

Card 1/2 UDC: 532.522

L 9560-66

ACC NR: AP5027574

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two axisymmetrical turbulent air jets issuing from different diameter (d_1 and d_2) cylindrical nozzles at an angle of 90° to each other at different pressures are mixed, the inclination angle of the resulting flow is:

$$\operatorname{tg}\alpha_1 = \frac{\Delta p_2}{\Delta p_1}\left(\frac{d_2}{d_1}\right)^2.$$

Comparison of the calculated results with published experimental data showed that for some regimes the agreement with this experiment is good, but in some cases the difference is substantial; therefore, the proposed method is only approximate. Orig. art. has: 2 figures and 5 formulas.

[PS]

SUB CODE: ME/ SUBM DATE: 26Jan65/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS: 4151

Card 2/2

GODIK, M.M., inzh.; KIRILLOV, V.A., inzh.

Starting the diesel motors of the S-80 and S-100 tractors in winter. Stroi. truboprov. 6 no.3:28-29 Mr '61. (MIRA 14:3)
(Diesel engines—Cold weather operation) (Tractors—Fuel systems)

KIRILLOV, V. A., Cand Tech Sci -- (diss) "Study of angular deformations occurring during repair ~~by~~ arc welding." Len, 1957. 6 pp (Len Inst of Engineers of Water Transport, Chair of Technology of Ship Building and Ship Repair) (KL, 52-57, 107)

KIRILOV V.A.

137-58-3-5305

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 120 (USSR)

AUTHOR: Kirillov, V. A.

TITLE: Reconditioning of Crankshafts by Means of Arc Welding (K voprosu o remonte kolenchatykh valov elektrosvarkoy)

PERIODICAL: Tr. Leningr. in-ta inzh. vodn. transp., 1957, Nr 24, pp 187-195

ABSTRACT: Theoretical and experimental investigations were carried out in order to determine the magnitude of welding deformation with reference to the process of reconditioning marine crankshafts by means of bead welding over transverse cracks. In determining the magnitude of the angular deformation a method was adapted in which a transverse roller was welded onto the edge of a plate of unit thickness, after which N. O. Okerblom's analytico-graphical method was applied. A technique is given which may be used for the determination of residual curvature and of the width of the plastic deformation zone. Calculated data are substantiated by experimental results.

Card 1/1 V.M.

KIRILLOV, V.A.

Machine for making flat spirals of metal bands. Biul. tekh.-ekon. inform. no.3:27-29 '58. (MIRA 11:6)
(Machine tools)

SOV/137-59-5-10319

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 124 (USSR)

AUTHOR: Kirillov, V.A.

TITLE: Determining the Effect of Non-Simultaneous Seam Welding on the Magnitude of Angular Deformation of the Work Piece

PERIODICAL: Tr. Leningr. in-ta inzh. vodn. transpor., 1958, Nr 25, pp 260-267

ABSTRACT: The author carried out analytical investigations into the effect of welding time on the magnitude of the transverse contraction of the seam and on the angular deformation of the weld joint. He established the quantitative dependence of the width of the plastic deformation zone on the time of producing a one-layer seam in 10 - 30 cm thick work with a linear energy of 200 - 6,000 cal/cm. On the basis of previous investigations (See RZhMet, 1958, Nr 3, 5305), the angular deformation of the weld joint was determined. Comparison of computational and experimental results showed that their divergence was 12 - 15%.

Card 1/1

V.S.

KIRILLOV, V. A.

124-58-6-7017

Translation from: Referativnyy zhurnal, Mekhanika. 1958, Nr 6, p 107 (USSR)

AUTHORS: Artsimovich G. V., Kirillov, V. A.

TITLE: An Optical Method Used With High-speed Photography to Study Stress Distribution in Impact-loaded Materials (Primeneniye opticheskogo metoda v sochetanii s vysokoskorostnoy fotografiyey dlya izucheniya raspredeleniya napryazheniy v materiale pri udarnykh nagruzkakh)

PERIODICAL: *Izv. Dnepropetr. gorn. in-ta*, 1957, Vol 30, Nr 2, pp 109-118

ABSTRACT: The purpose of this study was to determine the stress distribution that develops in rock subjected to the action of a cutting tool and to ascertain the variations that occur in the character of the stress distribution when different types of cutting tools are used and when the relationship of the static and dynamic forces applied to the cutting tool is varied.

(Reviewer's name not given)

1. Rock--Stresses 2. High speed photography--Applications
3. Cutting tools--Performance

Card 1/1

YEGOROV, I.N., dotsent.; KIRILLOV, V.A., veterinarnyy vrach.

Some details of treating hypovitaminosis in calves. Veterinariia 34 no.3:36-39 Mr '57. (MLRA 10:4)

1. Ul'yanovskiy sel'skokhozyaystvennyy institut. (for Yegorov)
2. Sovkhoz "Sakko i Vantsetti" Ul'yanovskoy oblasti, Cherdaklinskogo rayona.
(Deficiency diseases in domestic animals)
(Calves—Diseases)

ALEKSEYEV, G.K.; KIRILLOV, V.A.; SHNYRENKOVA, O.V.

Clinical aspects and pathology of primary rheumatic fever in elderly patients. Vop.revm. 2 no.3:77-81 Jl-S '62. (MIRA 16:2)

1. Iz Glavnogo voyennogo gospitalya imeni akad N.N. Burdenko (nach. L.I. Lyalin).
(RHEUMATIC FEVER) (AGED—DISEASES)

KIRILLOV, V.A.; TVERDOKHLEBOV, V.I.; KHOMENKO, V.I.

Demonstration experiment using a zone plate. Usp. fiz. nauk 82 no.1:166-167 Ja'64. (MIRA 17:2)

Kirillov, V.D.

CARD 1 / 2 PA - 1754

SUBJECT USSR / PHYSICS

AUTHOR BEZBATCENKO,A.L., GOLOVIN,I.N., IVANOV,D.P., KIRILLOV,V.D., JAVLINSKIJ,N.A.

TITLE The Investigation of a Gas Discharge with High Amperage in a Longitudinal Magnetic Field.

PERIODICAL Atomnaja Energija, 1, fasc.5, 26-37 (1956)
Issued: 1 / 1957

The present work describes the investigations of a gas discharge in deuterium at pressures of from 0,05 to 0,4 mm torr. The stages of the discharge from the growth of the field from zero to the maximum are investigated. Amperage attained 700 kiloampères and the field strength of the longitudinal field was 12000 Ørsted. Investigations were carried out at a field strength of the longitudinal field which was comparable to that of the discharge current. The momentum device used is explained on the basis of a drawing. It consists of a glass or farfor tube of a length of from 65 to 70 cm and with a diameter of from 18 to 20 cm with plane copper electrodes. These tubes are mounted inside a coil of 36 cm diameter. The condenser pile with C_1 = 23.000 microfarads on the occasion of its discharge by way of a spherical discharger produces damped electric oscillations with a frequency of 73 c.

Summary and discussion of results: The longitudinal magnetic field delays the compression of the discharge column under the influence of the eigenfield of the current. Breakdown of the discharge column begins later than at H_o = 0. (H_o - longitudinal field before the discharge). At $H_o \leq$ 2000 Ørsted radial

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1977
AUTHOR BEZBATCENKO,A.L., COLOVIN,I.N., IVANOV,D.P., KIRILLOV,V.D. JAVLINSKIJ,N.A.
TITLE On the Influence Exercised by a Longitudinal Magnetic Field on a Pulse-Like Gas Discharge with High Amperage.
PERIODICAL Dokl.Akad.Nauk 111,fasc.2, 319-321 (1956)
Issued: 1 / 1957

The authors investigated the influence exercised by a longitudinal magnetic field on the stability of a plasma column obtained by the pulse-like passage of a current through deuterium. Gas pressure on the occasion of these experiments amounted to from 0,05 to 0,4 mm torr. Amperage attained 700.000 ampères and the field strength of the longitudinal magnetic field was 12.000 Ørsted. A farfor or glass tube with a radius of 10 cm and an electrode distance of 70 cm served as discharge chamber. The scheme of the experimental system is shown in form of a diagram. On the occasion of these tests the strength of the discharge current, the voltage between the electrodes, the radius of the discharge column, and the average field strength of the longitudinal magnetic field in the plasma were determined simultaneously.
An enclosure shows recording of the discharge column during the first 10 microseconds. In the case of the presence of a longitudinal magnetic field the column contracts during the first 5 to 6 microseconds but remains homogeneous with respect to length. With an increase of field strength up to 6000 Ørsted compression slows down noticeably and a further increase of field strength is

KIRILLOV, V. D.

"Measurement of the Conductivity of the Plasma for the Passage of Current for a Long Time." (Work - 1954); pp. 212-225.

"The Physics of Plasmas; Problems of Controlled Thermonuclear Reactions." Vol. II. 1958, published by Inst. Atomic Energy, Acad. Sci. USSR.
resp. ed. M. A. Leontovich, editorial work V. I. Kogan.

Available in Library.

KIRILLOV V. D.

DOBROKHOTOV, E. I., IVANOV, D. P., MUKHOVATOV, V. S., KIRILLOV, V. D., PETROV, D. P., RAZUMOVA, K. A., STRELKOV, V. S., SHEPELEV, M. N. and YAVLINSKIY, N. A.

"Investigation of Plasma Heating in Toroidal Chambers."

paper to be presented at the 2nd UN Intl. Conf. ont the peaceful uses of Atomic Energy, Geneva, 1 - 13 Sep 58.

KIRILLOV, V.D.

Radiation energy losses in a gas discharge plasma. Zhur.eksp.i teor.fiz. 37 no.4:1142-1144 O '59. (MIRA 13:5)
(Plasma (Ionized gases))

82518

S/020/60/133/04/11/031
B019/B060

24.2120

AUTHORS: Ivanov, D. P., Kirillov, V. D.

TITLE: A Study of the Toroidal Discharge in a Fast-changing Longitudinal Magnetic Field

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 4, pp. 793-796

TEXT: The authors state in the introduction that a longitudinal alternating field can be also used for the conservation and heating of plasma and not only for securing its stability. It is briefly shown that there may be an equilibrium between outer and inner magnetic field, if either the plasma pressure in unidirectional fields is maintained by means of a slight difference of the outer and inner field, or if the field inside the plasma cord almost equals the outer field, but has the opposite direction. In both cases, formulas (1) and (2) are derived for $\Delta H = \sqrt{\overline{H}_i^2 - H^2}$, where H_i is the inner field, and H is the outer field. It is further shown that if the outer field changes rapidly enough, the

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A Study of the Toroidal Discharge in a Fast-changing Longitudinal Magnetic Field

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pressure of the excessive inner field is considerably larger than the plasma pressure. If the outer field then changes its direction and attains the value $-\Delta H/2$, the inner field is equal to $+\Delta H/2$. On an interruption of the further change in the outer field, the plasma cord starts contracting in agreement with (2). The experiments described here, were carried out in a toroidal discharge chamber having a diameter of 40 cm. The working pressure of deuterium or argon was varied from 0.004 to 0.02 torr, and the discharge current attained 50 ka at an initial voltage of 360 v. The half-period was 250 microseconds. A longitudinal field with 4000 oersteds, that was practically constant during the discharge, and a fast-changing field with ± 6000 oersteds were generated in the chamber. The discharge was photographed with quick photorecorders, and the magnetic longitudinal field as well as the self-consistent field of the current were measured with probes. Examples are given in Figs. 1 and 2. It appears from the discussion of results that the opposing field lasted for 10-25 microseconds, and the conductivity at the beginning of contraction was $(1 - 2) \cdot 10^{14}$ CGSE. In contrast to Kolb (Ref. 5) the existence of an opposing field was established by measuring the conductivity in the longitudinal direction of the magnetic field. There are

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7844
SOV/57-30-3-10/15

AUTHOR: Kirillov, V. D.

TITLE: Radiation Energy Losses in a Gaseous Discharge Plasma (Reported at the IV International Conference on Ionization Phenomena in Gases. Upsala (Sweden), 1959)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol 30, Nr 3, pp 320-329 (USSR)

ABSTRACT: As Ware pointed out (see reference), only a small fraction of Joule heat goes into ohmic heating of a plasma while the rest compensates for energy losses. Experimenting with stable plasma twines separated from the walls, the author tried to clarify the relative role of the radiation energy losses and losses due to charged particles which leave the plasma. He discovered that the bulk of energy is lost by radiations of impurity ions. This is in agreement with theoretical conclusions of Knorr (Zs. Naturf., 13a, 941, 1958) and Kogan (DAN SSSR, 128, 4, 1959). Tests were performed

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inside a cylindrical porcelain discharge chamber 22 cm diam. Distance L between flat, 4 cm diam copper electrodes was 70 cm. Discharge current varied between 13 and 45 Ka lasting a half-period of approximately 500 μ sec. Longitudinal magnetic field strength varied between 0 and 24,000 oersted. Using conditions satisfying the Shafran-Kruskal criterion, the author observed a stable plasma twine with a diam. a $\sim$6 cm. This diam containing 80% of the current did not vary much with current amplitude and size of magnetic field. Using H = 7,300 oersted and I = 34.5 and 13.5 ka, the author liberated $12 \cdot 10^3$ and $2.8 \cdot 10^3$ Joule of energy respectively, corresponding to an energy production density of 6.0 and 1.4 Joules/cm^3. Average currents achieved were 1,000 and 500 a/cm^2, and the active component of interelectrode potential reached 1,600 and 900 v. Conductivity of plasma was $3\text{-}5 \cdot 10^{13}$ CGSE. First, the author performed general trial tests by mounting a specially constructed

ionization chamber into the well of the discharge chamber. Comparing the currents obtained during non-stationary runs (H = 0) and stationary runs ($H > \frac{4LI}{\pi ca^2}$) the author concluded that the former currents are caused by charged particles entering the chamber while the latter are caused by photoelectrons ejected from the walls of the chamber by photons originating in the discharge. Using LiF filters, taking into account spectral distribution of light, and using relation between quantum yield of photoeffect and wavelength, the author estimated radiation energy losses to be 20-100% of the Joule heat produced inside the plasma. The author also performed spectral analysis of emitted light using the vacuum spectrograph DFS-6 with a glass diffraction grating (600 lines/mm) and a 5 A/mm dispersion in its 60 to 2,000 A working range. Spectrum was fixated by sodium salicylate on a sensitized photoplate RF-3 with a 300 GOST (All Union State Standard)

units of sensitivity. The majority of bright lines are caused by ionized atoms of carbon and wall material elements Si, O, and Al. Relative line intensity was obtained by a MF-4 self-registering photometer. The author assumed that: (1) the diffraction grating does not alter the spectral composition; (2) all films are equally sensitized and quantum yield is constant over the entire spectral range; (3) astigmatism of the concave grating is almost compensated by the variations of the line half-width along the spectrum; (4) exposition ϵ is proportional to number of discharges taken, and ρ equals unity in the law $\epsilon = It^{\rho}$ (I, intensity; t, exposure time). Figure 8 shows the majority of light energy falls into the interval 1,100-1,400 A. Separate experiments showed $\lambda > 2{,}500$ A radiations constitute only some 5% of the total.

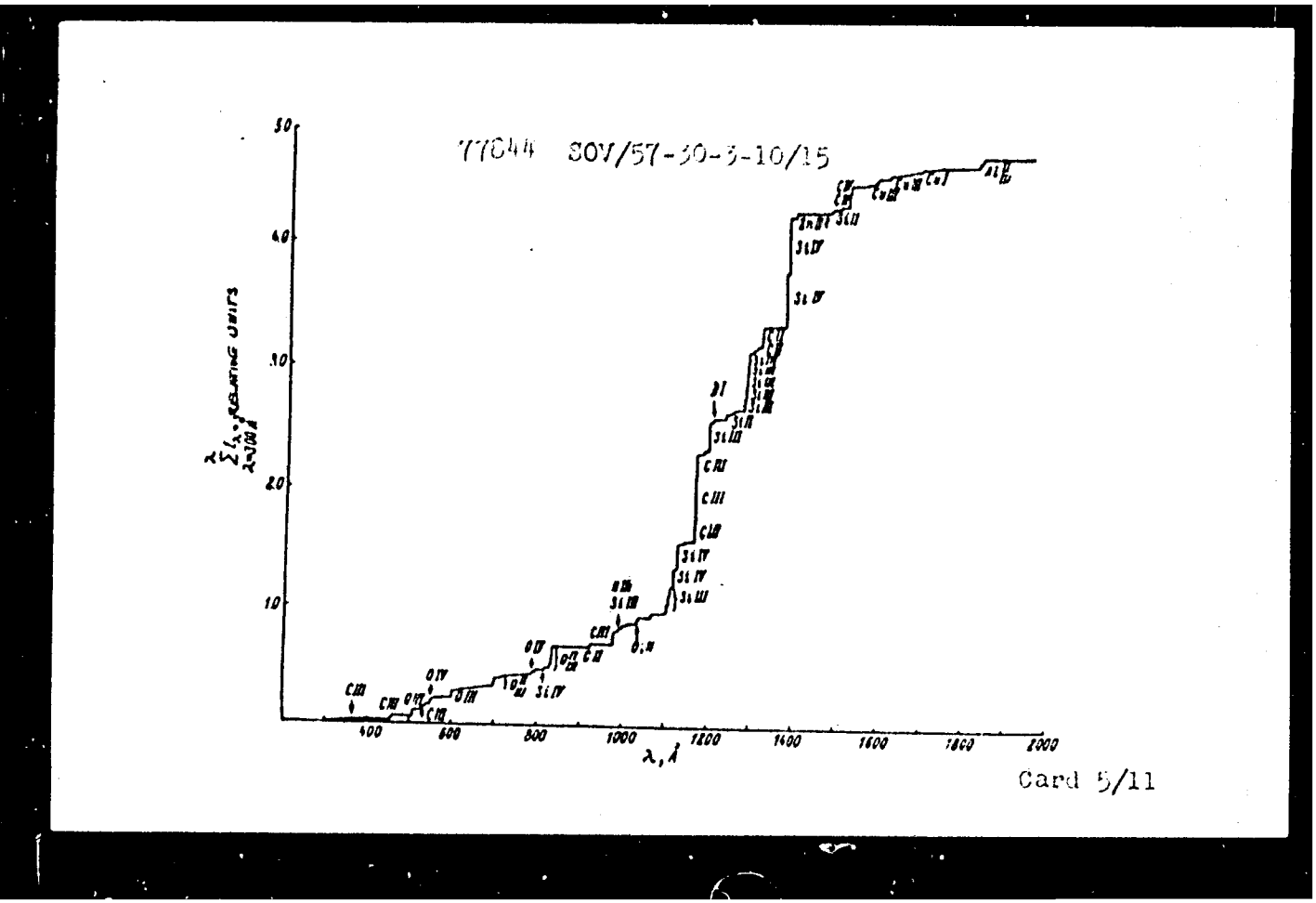

Fig. 8. Diagram of summation of energy $\sum_{\lambda=300}^{\lambda} E_{\lambda}\lambda$

Conditions: I = 34.5 Ka; H = 7,300 Oe; p = 1 to $2 \cdot 10^{-2}$ mm Hg. For the case of I = 13.5 Ka, the curve comes out to be very similar. E_{λ} is in relative units equal for I = 34.5 and 13.5 Ka.

Absolute energy losses were computed using the thermoluminophor method (V. A. Arkhangel'skaya, Bl. I. Vaynberg, T. K. Razumova. Zhurn. "Optika i spektroskopiya," 1, 1018, 1956). $CaSO_4$-Mn phosphorus accumulates energy from the $\lambda <$ 1,400 A region and then after heating emits a proportional amount of $\lambda \sim$ 5,000 A light. Calibrating the phosphor in absolute units, the author was able to use it in

conjunction with a photomultiplier and obtain absolute values for intensities of radiations from the plasma twine. Taking into account spectral sensitivity of phosphorus $S(\lambda)$, total energy loss was computed using equation:

$$E = K \frac{\sum_{\lambda=2900\text{ Å}}^{\lambda=3900\text{ Å}} E_\lambda}{\sum_{\lambda=2900\text{ Å}}^{\lambda=3900\text{ Å}} E_\lambda S(\lambda) \varphi(\lambda)} \frac{S}{S_0},$$

where K is a geometrical factor and S_0 is a scale factor. Results are contained in Table "B."

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Radiation Energy Losses in a Gaseous Discharge Plasma

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Table "B." (a) Discharge conditions; (b) quantity of Joule heat produced per one discharge; (c) quantity $\sum_{\lambda = 300\ A}^{\lambda = 2000\ A} E_\lambda$ in relative units; (d) fraction of light energy, carried away by Lyman lines; (e) fraction of total energy, lost through radiation, according to thermoluminophor measurements in three positions. Values are averages without filter; (f) (with LiF filter)

Card 3/11 Table "B" on Card 9

Radiation Energy Losses In a Gaseous Discharge Plasma

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Table "B."

(c.)	[illegible]	[illegible]	[illegible]
(b)	2.8 [illegible]	> 1.3	12 [illegible]
(c)	1.0	4.8	4.8
(d)	1	–	1
(e)	180	–	580
	0.65	–	0.80
	1.05	–	–
	0.65	–	0.70
(f)	0.5	–	0.4

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In the mean, one finds that the light losses are ~ 0.7 from total energy transmitted to the plasma. The author estimates errors to be not larger than 50%. He concludes that even in the case of an unstable discharge, only a small fraction of energy is brought to the walls by moving charged particles. The question of the amount of impurities remains still open. The author only suspects on the basis of the low conductivity observed that the contamination must be fairly high. Unless causes of such contaminations are removed, it is hard to expect any success in heating deuterium plasma using Joule heat. Graduated thermoluminaphor and a calibrated light source were supplied by V. A. Arkhangel'ska and T. K Razumova. M. K. Ivanova and S. A. Kulikov measured transmission of the filter. V. S. Mukhovatov helped to build the ionization chamber, and L. A. Artsimovich and N. A. Yavlinskiy helped during the work. There are 10 figures; 1 table; and 11 references, 4 Soviet, 1 German, 3 U.K., 3 U.S. The 5 recent

KIRILLOV, V. D. (USSR)

"Vacuum U V Radiation Physics in the USSR"
"Vacuum uv Emission from Hot Plasmas"

report to be submitted for the 1st Intl. Conference on Ultraviolet Vacuum Radiation Physics.
University of Southern California
16-19 April 1962

IVANOV, D.P.; KIRILLOV, V.D.

[Studying a toroidal discharge in a rapidly changing longitudinal magnetic field] Issledovanie toroidal'nogo razriada v bystromeniaiushchemsia prodol'nom magnitnom pole. Moskva, In-t atomnoi energii AN SSSR, 1960. 26 p. (MIRA 16:12)
(Magnetic fields)
(Electric discharges through gases)

[illegible], . .

Technology of precast reinforced concrete for general repairs of residential buildings. Nauch. trudy /KKI no.31:90-93 '64.

Use of structural keramzit concrete for general repairs of buildings. Ibid.:94-97 (MIRA 18:9)

KIRILLOV, V.F., aspirant

Ionization of the air of rooms. Vod. i san. tekh. no.12:1-3 D '62. (MIRA 15:12)

(Air, Ionized)

KIRILLOV, V.F.

Degreasing and washing station. Kozh.-obuv.prom. 6 no.3:32-33 Mr '64. (MIRA 17:4)

Biochemical changes in hematogen on storage. V. G. Kirillov. *Voprosui Pitaniya* 5, No. 3, 65-8(1936).—Pasteurization at 54° during manufacture is not sufficient, resulting in subsequent bacterial and enzyme action with decrease in carbohydrates and increase in acidity.

F. H. Rathmann

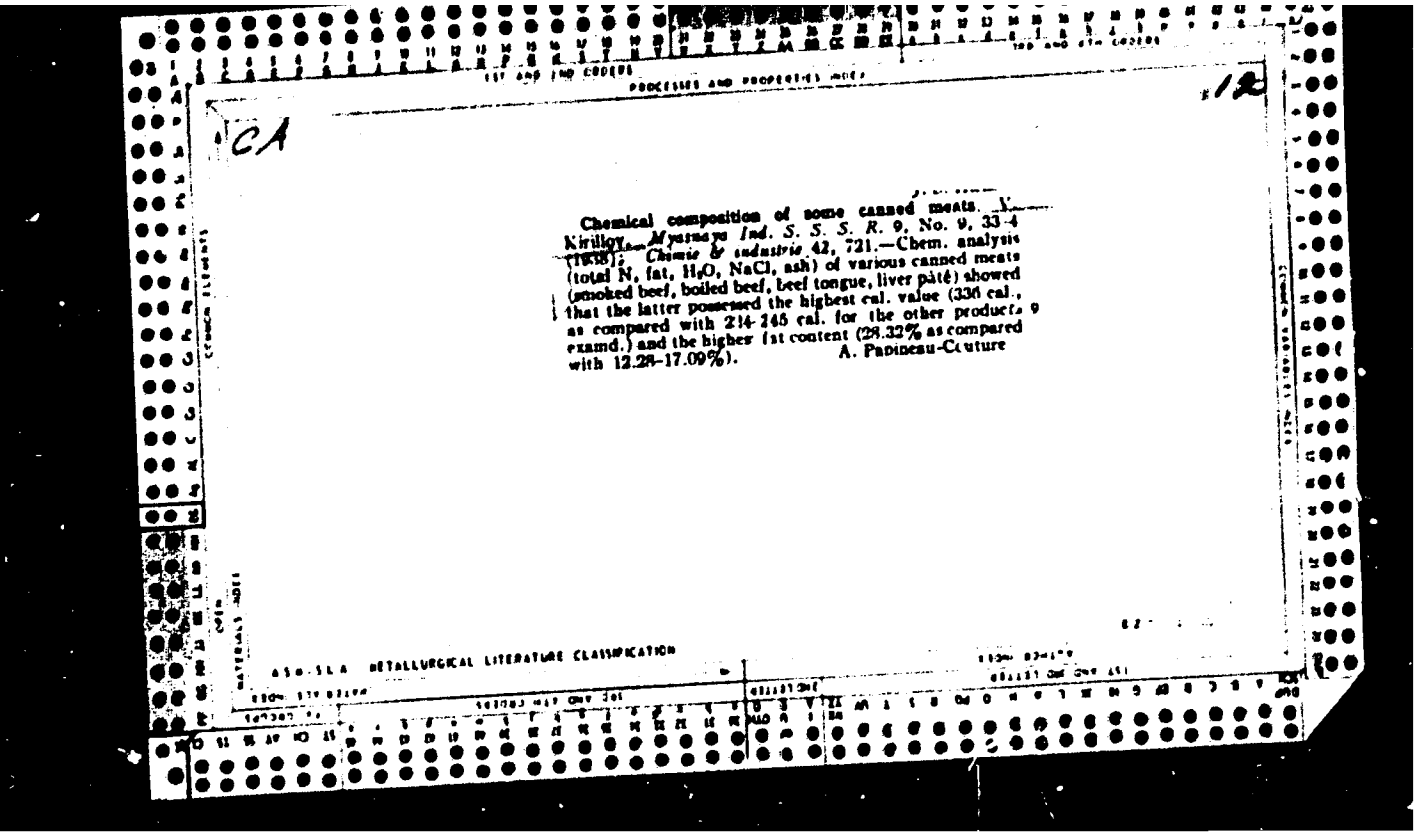
METALLURGICAL LITERATURE CLASSIFICATION

12

PROCESSES AND PROPERTIES INDEX

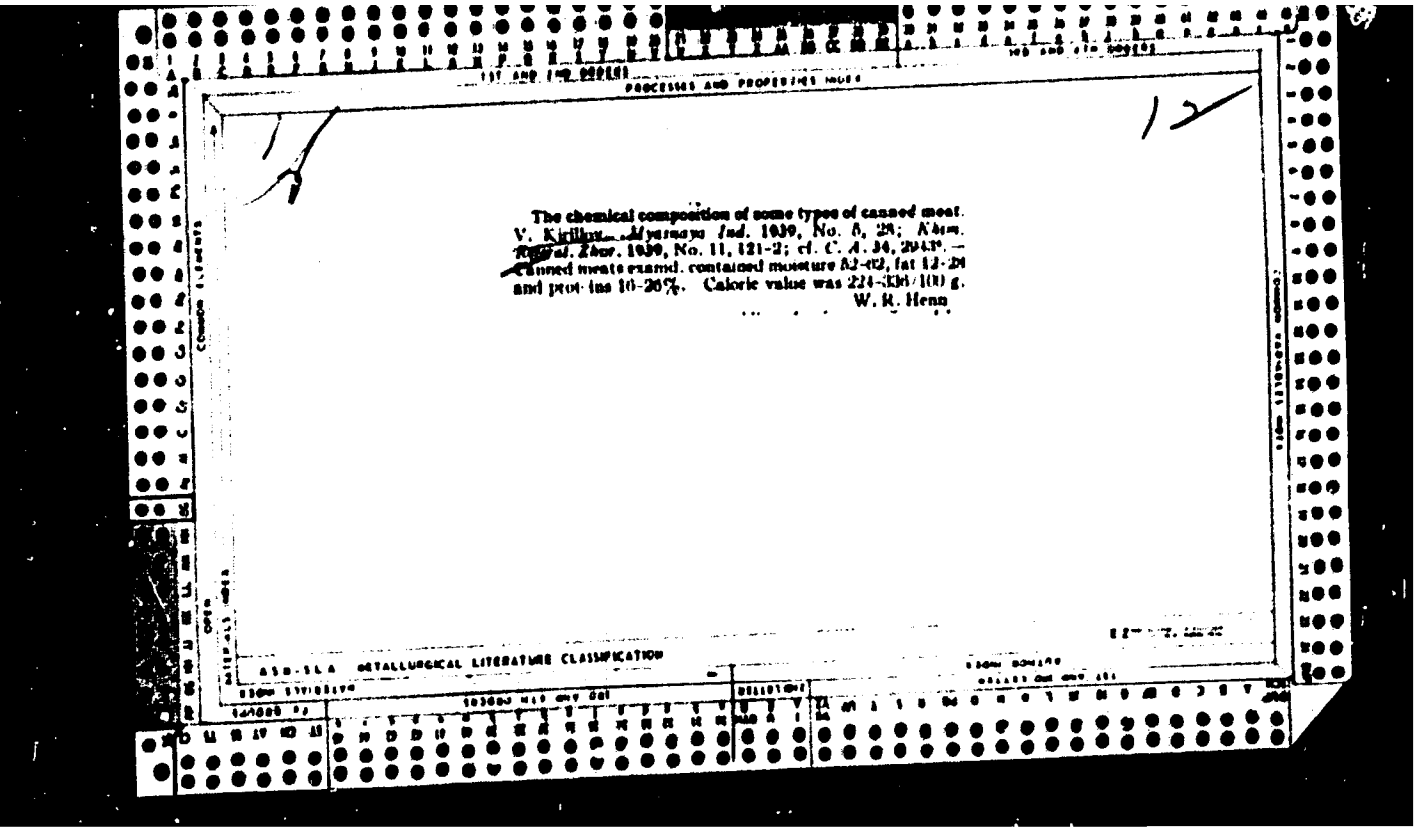
Chemical composition of canned goods V. G. Kirillov. *Voprosy Pitaniya* 5, No. 3, 81(1936). Analyses of canned meats are given. F. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

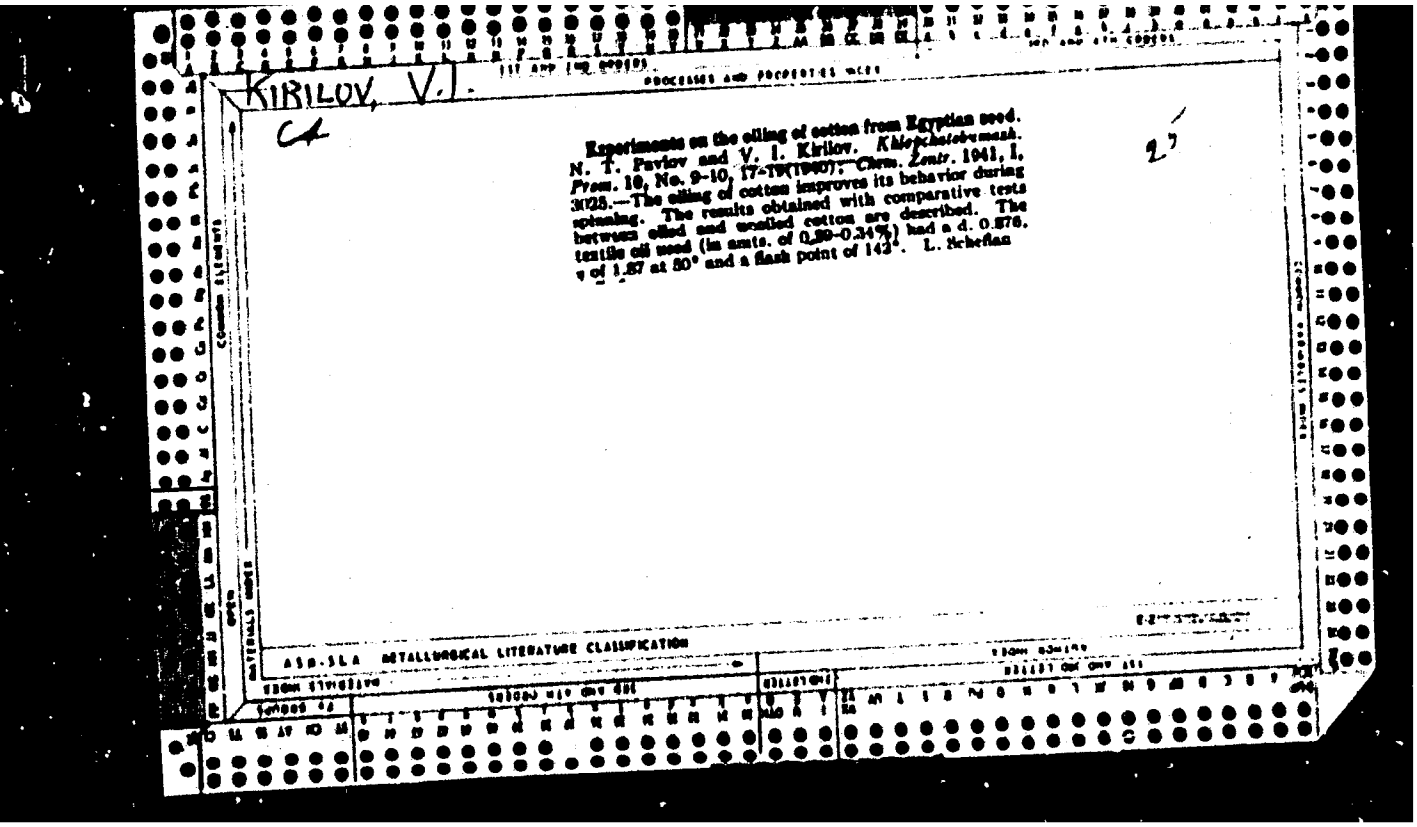


CA

Chemical composition of some canned meats. V. Kirillov. *Myasnaya Ind. S. S. S. R.* 9, No. 9, 33-4 (1938); *Chimie & industrie* 42, 721.—Chem. analysis (total N, fat, H_2O, NaCl, ash) of various canned meats (smoked beef, boiled beef, beef tongue, liver pâté) showed that the latter possessed the highest cal. value (336 cal., as compared with 214-245 cal. for the other products examd.) and the higher fat content (28.32% as compared with 12.28-17.09%). A. Papineau-Couture



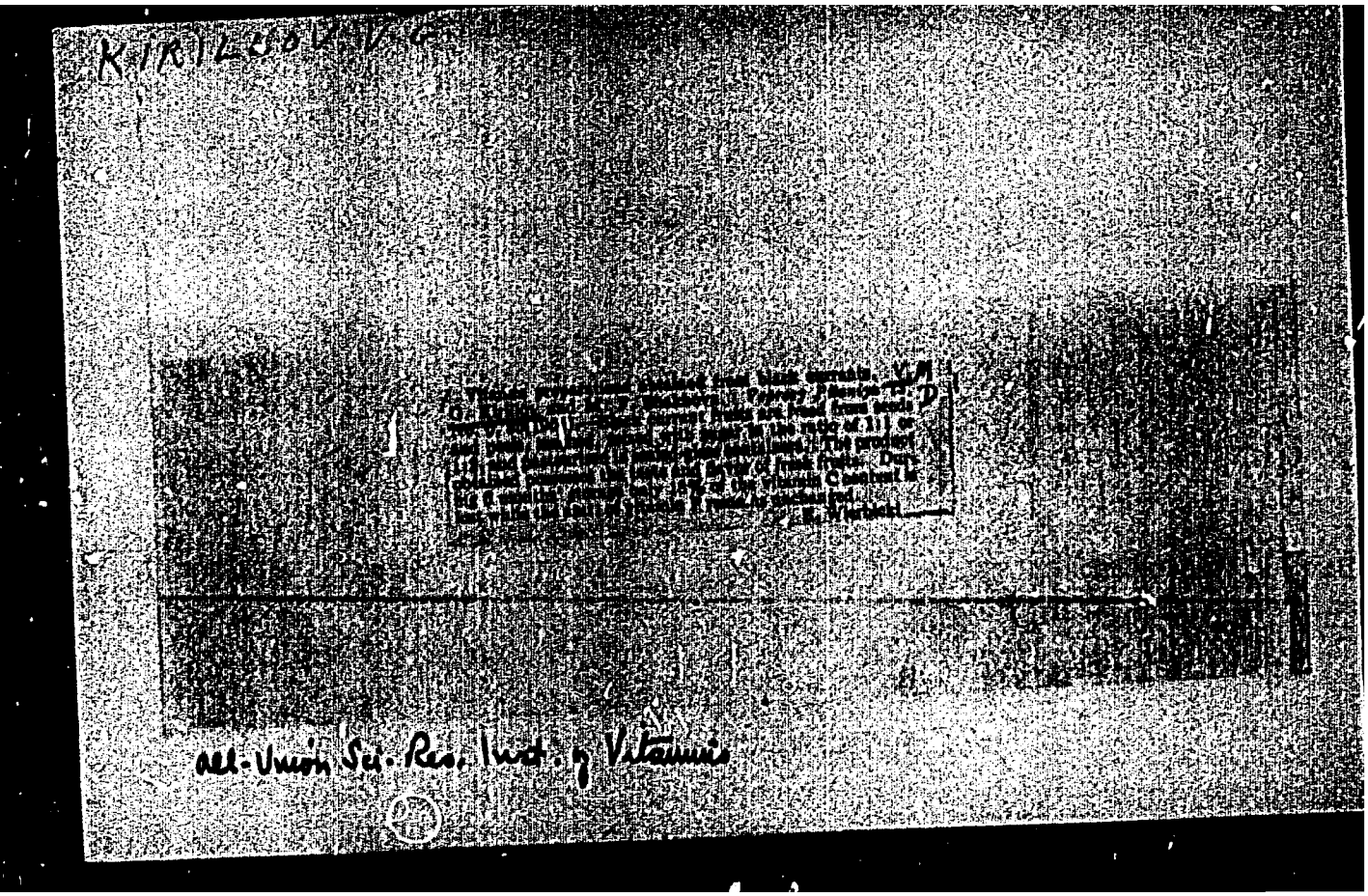
The chemical composition of some types of canned meat.
V. Kirillov. *Myasnaya Ind.* 1939, No. 8, 28; *Khim. Referat. Zhur.* 1939, No. 11, 121-2; cf. *C. A.* 34, 2943⁸. — Canned meats examd. contained moisture 52-62, fat 12-28 and protein 10-20%. Caloric value was 224-336/100 g.
W. R. Henn



KIRILOV, V.I.

Experiments on the oiling of cotton from Egyptian seed. N. T. Pavlov and V. I. Kirilov. *Khlopchatobumazh. Prom.* 10, No. 9-10, 17-19(1940); *Chem. Zentr.* 1941, I, 3025.—The oiling of cotton improves its behavior during spinning. The results obtained with comparative tests between oiled and unoiled cotton are described. The textile oil used (in amts. of 0.30-0.34%) had a d. 0.876, η of 1.87 at 50° and a flash point of 142°. L. Scheflan

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION



SAKHAROV, M.D.; KIRILLOV, V.G.

Automatic production of board-type articles. Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 18 no.3: 36-38 Mr '65. (MIRA 18:5)

KIRILLOV, V.I.

PA 22T16

USSR/Aeronautics Aug 1947
Bombing
Radar

"Bombing During Periods of Heavy Overcast," V. Kirillov, 7 pp

"Vestnik Vozdushnogo Flota" No 8 (342)

There are three types of bombing: 1) bombing when the target is visible; 2) bombing when the target is visible without using radar; 3) bombing with the aid of radar. The author discusses bombing when leaving a cloud cover, low-level bombing and hedge hopping, bombing with limited visibility, bombing with heavy overcast without using radar, and finally bombing with the aid of radar.

22T16

KIRILLOV, V.I.

Feb 47

USSR/Air Force
Airplanes, High altitude

"Bombing from High Altitudes," M. Tikhonov, V. Kirillov, 6 pp

"Vestnik Vozdushnogo Flota" Vol XXIX, No 2

Largely mathematical discussion of relations between size of target, speed, altitude, etc. Illustrated with formulas and tables of operating data.

PA 1174

KIRILLOV, V. I.

AID P - 4978

Subject : USSR/Aeronautics - bombing

Card 1/1 Pub. 135 - 6/26

Author : Kirillov, V. I., Col., Dccent, Candid. of Tech. Sci.

Title : The effect of winds at various levels on the bombing

Periodical : Vest. vozd. flota, 9, 26-35, S 1956

Abstract : The author discusses in detail the effect of winds at various levels on the fall of the bomb, and, for better understanding of this problem, four typical examples are brought out by him. Seven diagrams, 3 tables. The article merits attention.

Institution : None

Submitted : No date

PHASE I BOOK EXPLOITATION SOV/5320

Kirillov, Valeriy Ivanovich, Docent, Candidate of Technical Sciences

Bombometaniye (Bombing) Moscow, Voyenizdat M-va obor. SSSR, 1960. 375 P.
No. of copies printed not given.

Ed.: I. M. Medvedev, Guards Lieutenant Colonel; Tech. Ed.: T.F. Myasnikova.

PURPOSE: This book is intended for flying personnel in all branches of aviation. It may also be useful to students in Air Force schools and members of aviation clubs of the All-Union Voluntary Society for the Promotion of the Army, Aviation, and Navy.

COVERAGE: The theoretical fundamentals of bombing, bombing techniques, and the basic theory of probability are discussed. Particular attention is given to problems in ballistics and sighting methods, and to a consideration of dive, pull-out, toss, and horizontal bombing techniques. Bombing-mission detail is also reviewed. Included are tables giving numerical data concerning bombs, bombing, and hits. The book contains many diagrams and examples of calculations. No personalities are mentioned. There are no references.

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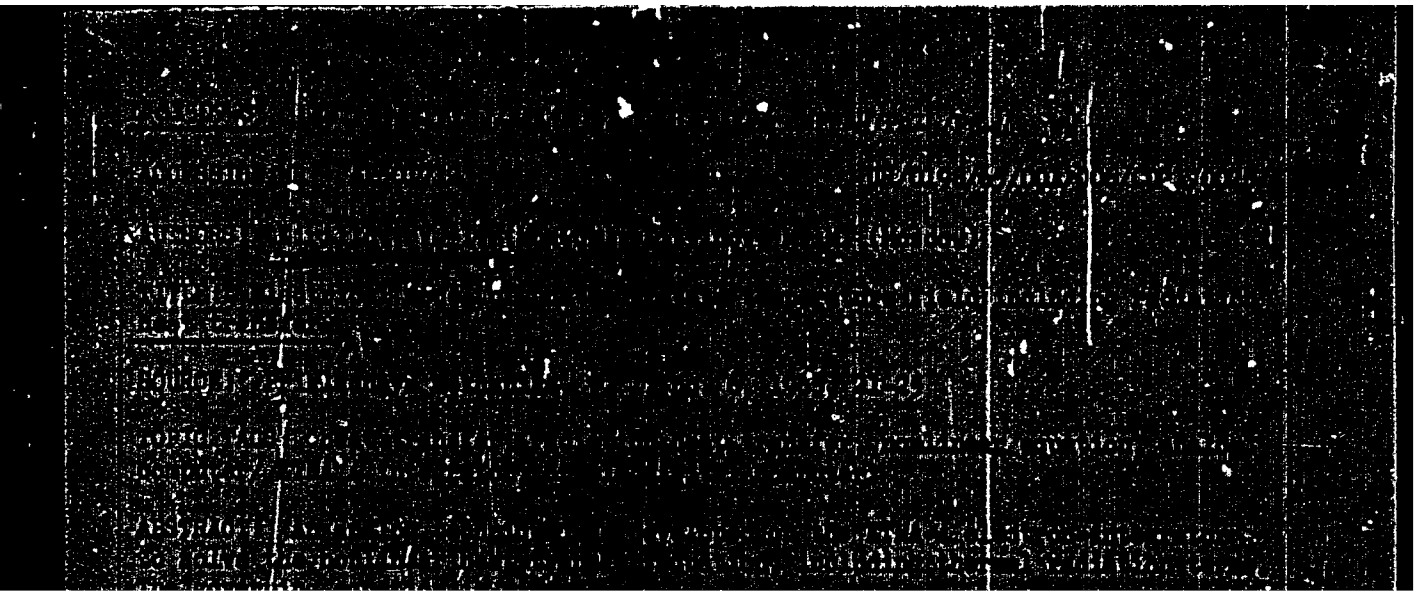

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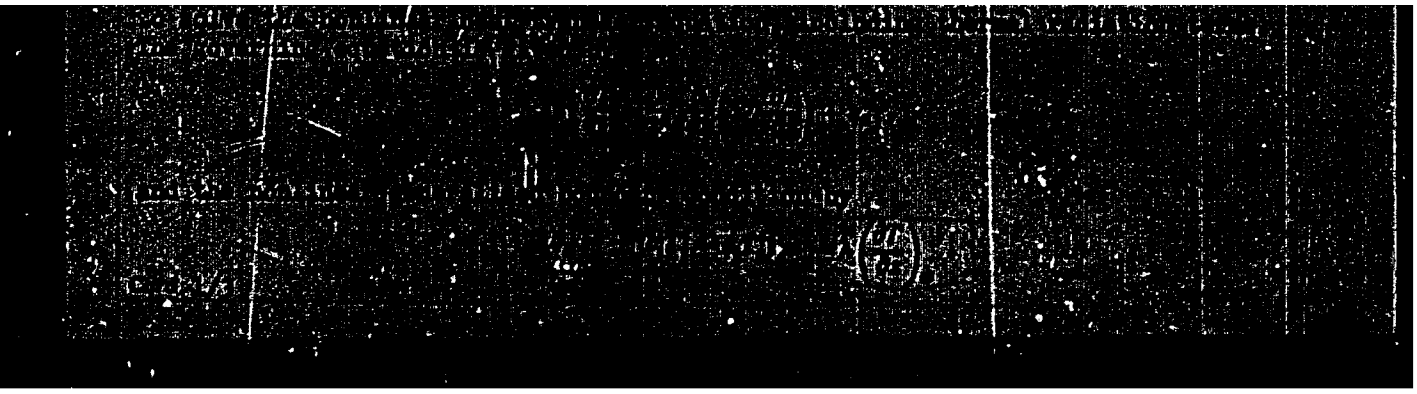

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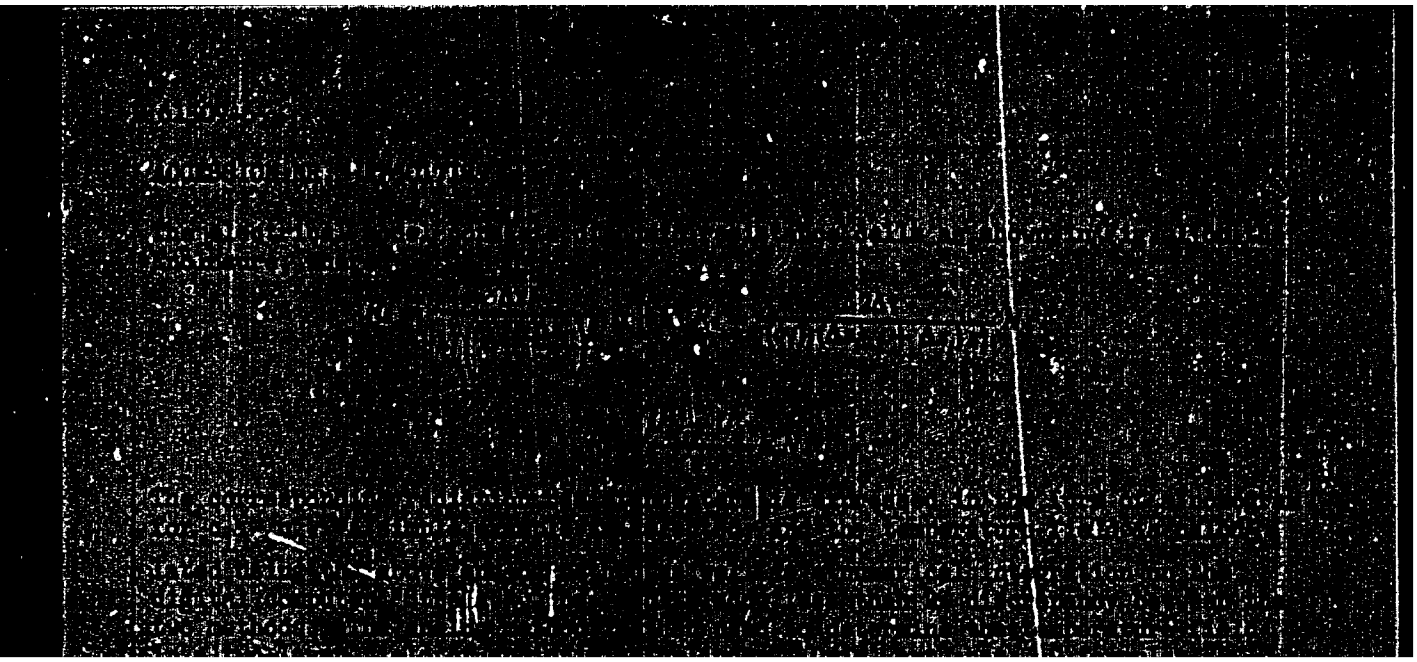

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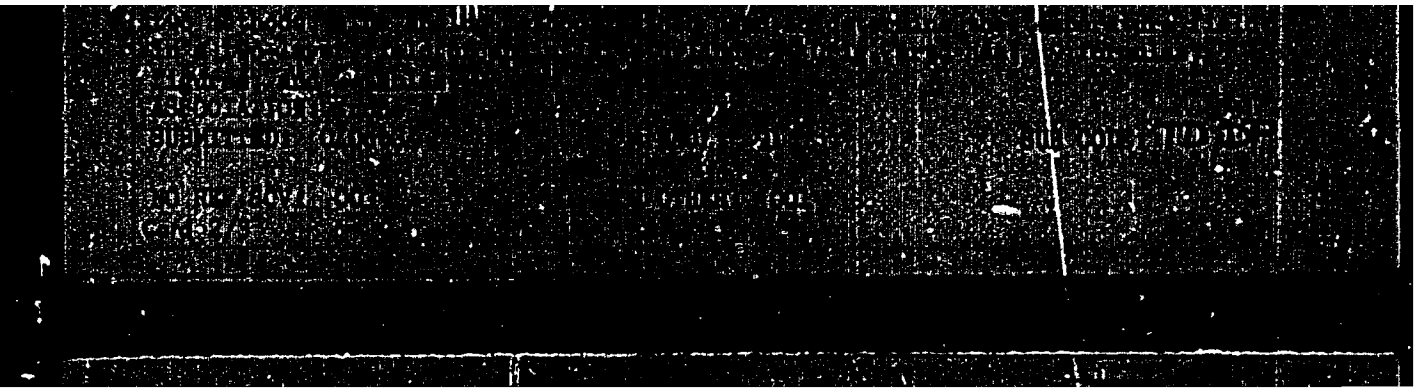

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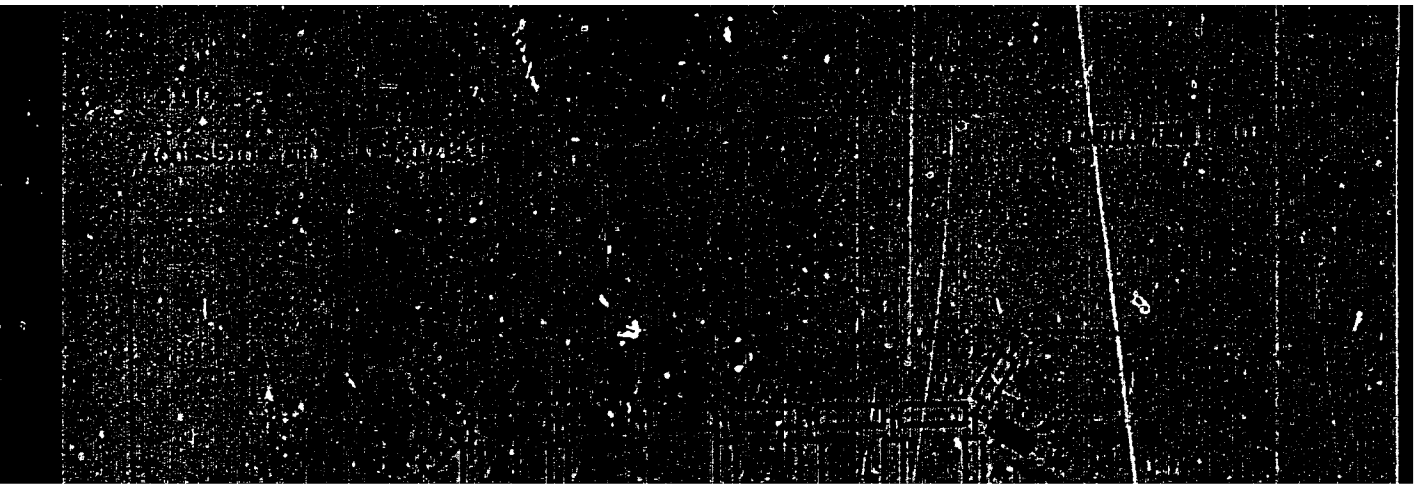

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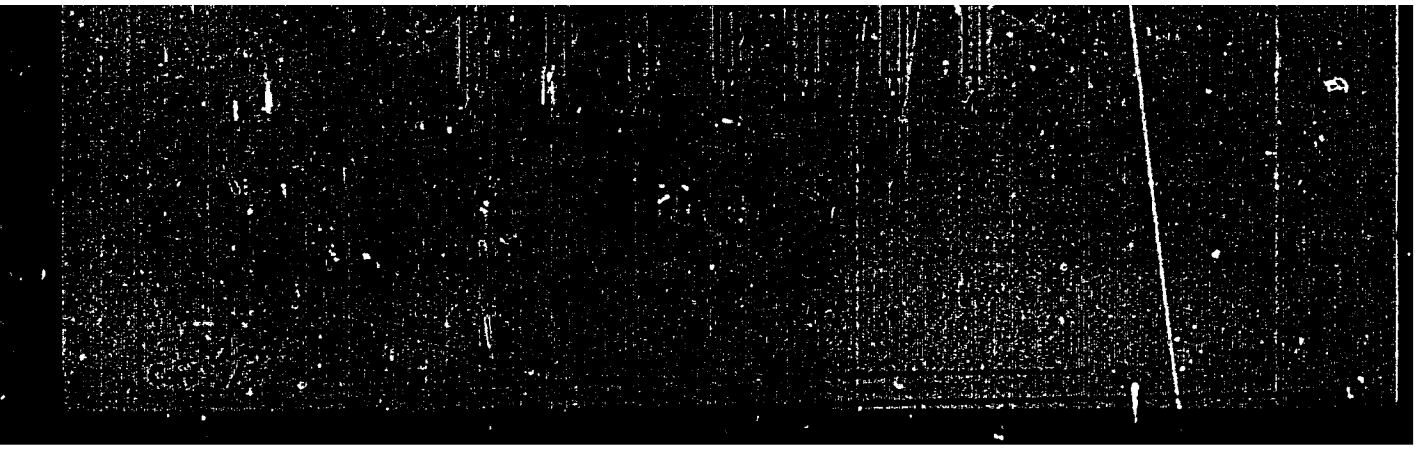


KIRILLOV, V.I., inzh.

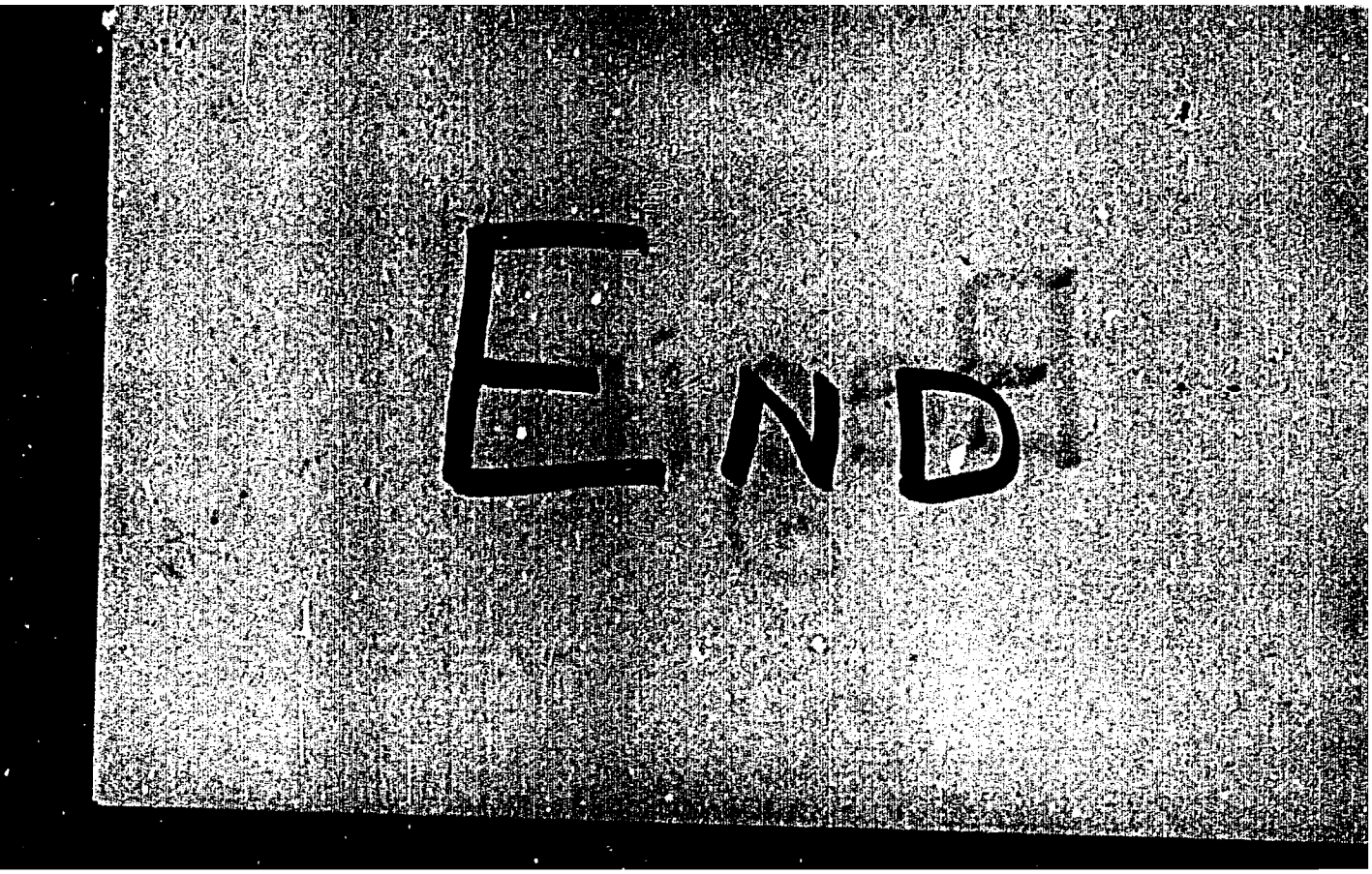
Investigating the action of an eight-axle gondola car on the track components and spans of metal bridges. Trudy MIIT no.153: 54-69 '62. (MIRA 16:2)
(Railroads--Freight cars) (Railroad bridges)

KIRILLOV, V.I., insh.

Analyzing the state of stress of the body of an eight-axle gondola car. Trudy MIIT no.153:109-125 '62. (MIRA 16:2)
(Railroads—Freight cars—Testing)

KIRILLOV, V.I., insh.

Evaluation of the dynamic characteristics of an eight-axle gondola car. Trudy MIIT no.153:132-141 '62. (MIRA 16:2)
(Railroads—Freight cars—Testing)



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